PENNSYLVANIA'S CHRISTMAS TREE SCOUTING REPORT
MAY 16, 2013

Weekly newsletter compiled by Sarah Pickel, PA Department of Agriculture.

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GROWING DEGREE DAY TOTALS, 5/15/13:

LOCATION	GDD TOTAL
Conoy Twp, Elizabethtown (SW), Lancaster Co.	466
Mount Joy Twp, Elizabethtown (NE), Lancaster Co.	280
Hallstead, Susquehanna Co.	172
Indiana, Indiana Co.*	302.5
Millcreek, Erie Co.**	263
New Cumberland, York Co.	272
New Ringgold, Schuylkill Co.	267

** Figure courtesy of www.weather.com.*
*** Figure courtesy of Ruth Benner, PSU Cooperative Extension, Erie.*

PINE NEEDLE SCALE

This week, pine needle scale crawlers were beginning to hatch under the female scale covers on Eastern white pine in Lancaster and York Counties. Approximately 25-50% of the eggs underneath the covers had hatched into crawlers, or 1st stage nymphs. The eggs will continue to hatch and the crawlers will soon move out from under the adult coverings to spread out along the needles and move to new areas of the tree limbs. This scale can be identified by the bright white, oblong female scale covers. Scale crawlers are flat, oval shaped and paprika colored. Hosts of this pest include Eastern white pine, Scotch pine & Mugo pine. It may also be found on spruce, true fir and Douglas-fir, although these occurrences are less common. Crawlers emergence can last 2 to 3 weeks, so if the population is heavy enough to warrant a treatment, growers may want to consider making one application of an insecticide, followed by a 2nd application one week later. If control is not achieved at this point in the season, there is a second generation which is active in mid-July. This is another time when the scale may be managed. For more information on pine needle scale, visit: http://extension.psu.edu/ipm/program/christmas-tree/pest-fact-sheets/needle-discoloration-and-injury/pine-needle-scale.pdf/view.

Figure 1: Pine needle scale female scale with crawlers [S. Gardosik, PDA]

DISEASES OF SPRUCE

Spruce needle rust continues to sporulate this week in much of PA, including Cumberland and Schuylkill Counties. This means that fruiting bodies of the disease which infects Colorado blue and Serbian spruce is currently releasing spores which are spread through the air and will infest any newly expanding needles which are have not been coated with a protective fungicide. The fruiting bodies can be seen on last season's needles splitting the needle surface within noticeable yellow-orange bands which go the whole way around the needle. In Schuylkill County, growers have already made their first fungicide application to susceptible spruce. The time to control for this is when the susceptible spruce have begun to break bud. Fungicide applications should begin at bud

Figure 2: Spruce needle rust sporulating on Colorado blue spruce [T. Olson, PDA]

break and be repeated weekly until the needles harden off or until the diseased needles have been cast. For more information, visit: http://extension.psu.edu/ipm/program/christmas-tree/pest-fact-sheets/needle-discoloration-and-injury/spruce-needle-rust.pdf/view.

Two other diseases of spruce that may be of concern at this time are Rhizosphaera needle cast and Stigmina needle cast. Both disease affect Colorado blue spruce and occasionally white spruce. (Rhizosphaera may also infect Englemann spruce and Stigmina may also infect Black and Serbian spruce.) These diseases are believed to act very similarly, however, less is known about Stigmina. Black fruiting bodies are pushed out through the stomates on previous seasons' needles, typically on the lower branches of the trees. The fruiting bodies of Rhizosphaera will appear rounded and smooth when viewed with a high power hand lens or a microscope. Stigmina's fruiting bodies have a fuzzy or whiskery appearance under magnification. At this time in the season, spores are released from these fruiting bodies and will infect the newly expanding needles. Infected needles will turn brown and be cast from the limbs as the season progresses; however, the needles may also stay attached to the tree and remain infectious for several seasons. To control this disease, make an application when new spruce needles are ¾"-1½" long and make a second application 3 weeks later. For more information on Rhizosphaera needle cast, visit: http://extension.psu.edu/ipm/program/christmas-tree/pest-fact-sheets/needle-discoloration-and-injury/rhizosphaera-needle-cast.pdf/view.

Figures 3 & 4: Above- Rhizosphaera needle cast [T. Olson, PDA]; Below- Fruiting bodies of Stigmina needle cast [Diane Plewa, University of Illinois]

Frost Damage

This past Monday and Tuesday, much of Pennsylvania experienced below freezing temperatures. This drop in temperatures resulted in frost damage for numerous Douglas-fir trees which had a significant amount of tender new growth exposed, and for some other tree varieties as well. This damage is exhibited as browning or dieback of new growth. Damage may be worse in some low areas of tree blocks where pockets of cold are may have settled. Once the damage is done, there is not much that can be done for this season other than to shear some of the damage off later in the season.

Figure 5: Frost damage to new growth of Douglas-fir [S. Pickel, PDA]

Spider Mites & Eriophyid Mites

Some growers may be seeing a resurgence of both spider mites and Eriophyid mites (rust or sheath mites), even after a miticide application was made at the first sign of mite hatch. Mites have been very active in Schuylkill and York Counties. If populations of these mites continue to increase beyond the treatment threshold (10+ mites per twig), growers may want to consider making another miticide application before damage is done to the new growth. While the new needles are still tender, growers may want to avoid using a horticultural oil, which could lead to damage (burn) of tender growth.

Have You Seen This?

One of the lesser known pathogens in our state is fir broom rust. Although not common, it has been found in the northern part of the state. This disease has affected true firs in New York and New England states. The symptom of this disease is excessive growth of multiple shoots at the end of a branch, aka "brooms". The needles on these brooms are curled and stunted. Although this disease has not been a problem in PA, it would be good for growers to at least be aware of the damage in order to be able to recognize and curtail any future problems with this pathogen. For more information on this pest, visit: http://nysipm.cornell.edu/factsheets/n_gh/fir_broom_rust.pdf.

Figure 6: Fir broom rust [Steven Katovich, USDA Forest Service, Bugwood.org]

Looking Ahead

In the next week or two growers, should be scouting areas that had bagworm damage last season. As of this week, there were still only eggs inside bagworm cases in northern Dauphin County. In the next few weeks, however, larvae will be hatching inside the bags and will then exit the bags on strands of silk. The best time to control bagworm is at the time of larvae emergence, when the larvae are still small.

Helpful Resources

A list of Pennsylvania's registered miticides and insecticides, entitled *2011 Insecticides and Miticides for Christmas Tree Pests,* can be found at the Penn State Christmas tree Website, http://ento.psu.edu/extension/christmas-trees.

A great source for in-depth pest information and scouting suggestions is the PA IPM Program publication, *Integrated Pest Management for Christmas Tree Production: A Guide for Pennsylvania Growers*, available for free download (http://pubs.cas.psu.edu/FreePubs/pdfs/agrs117.pdf) or for purchase from the PSU College of Ag Publications office (phone: 814-865-6713, fax: 814-863-5560, e-mail: AgPubsDist@psu.edu). Ask for publication item # AGRS-117.

The next scouting report will be available May 23, 2013.